DSB
pcbriefs
DCRT Distributed Systems Branch

Let's go PC shopping

by John White

Shopping for a personal computer is a lot like car shopping. You think you know what you want, how much you want to pay, and you have checkbook in hand. Then the friendly sales representative shows you a list of options a mile long, and confusion sets in. Suddenly that PC "bargain" is getting pretty expensive.

DCRT has been recommending Dell computer systems for several years. The Dell OptiPlex is currently the model line of choice, since it is network certified, has a wide variety of options, and is very price competitive. Using the OptiPlex, I'll show you how to put together a few PC configurations that are, for the most part, close to what you might buy, given your needs. Our minimum goal is a system that will comfortably run Microsoft Windows 95 and a few business applications.

Bits and pieces

First, let's figure out what components are necessary and which are optional. The things you need in every system:

External case: That's the box itself, available in 3-, 5-, or 6-expansion slot versions, desktop and floorstanding.
Processor: The 486 is dead, so pick a Pentium 75, 90, 100, 120, or 133.
Memory: Windows works OK in 8MB, but shines brightest with 16–32MB.
Hard drive: 500MB to 1GB ought to keep you comfortable—for a while.
Floppy drive: A 3.5/5.25", 1.44/1.2MB combo drive frees up the second drive bay.
Monitor: Windows uses lots of icons, so think big (15"–21" models).
Keyboard/mouse: Choose from a small footprint to regular size keyboard, and get a Microsoft mouse.
Network card: We have a long, happy relationship with the 3Com Etherlink III.
Operating system: Get Windows 95 or Windows NT Workstation 3.51.

Some things you might need to consider but aren't necessary in many cases include:

256KB cache upgrade: This can boost system performance by 20%.
Multimedia components: A sound card, speakers, and CD-ROM drive can enhance the desktop.
Communications: Fax, modem, and voice cards are a must for the communication-savvy.
Video: The 1MB internal video memory option or separate accelerated video card makes Windows fly.
DAT drive: A handy way to back your data up, especially when your LAN doesn't provide this service.

*(See **Dell,** page 6)*

PUBnet gains native Netware connectivity

Netware users can now connect to PUBnet resources as they would to any other server on the Netware LAN. When you issue an SLIST (3.x) or NLIST Server (4.x) command, you will now see NIH-PUBSERVER. This is a Windows NT server running Microsoft's File and Print Services for Netware to emulate a Netware server. You can use the familiar MAP command to connect to any of these resources:

Resource	Volume
Microsoft's TechNet CD	TECHNET
Microsoft's TechNet CD 2	TECHNET2
Computer Select	SELECT
Support on Site (Apps)	SOSAPPS
Support on Site (Networks)	SOSNET

Connecting to Computer Select is as easy as issuing the following command:

```
MAP T:=NIH-PUBSERVER\SELECT:
```

The username is GUEST, and there is no password.

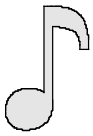
You can also connect to the PUBNET volume, which stores information available via the FTP and WWW servers.

HIGHLIGHTS:

Product newsbriefs for the Mac and PC

New Apple Sound Manager

Apple recently released an update to a very important part of the Macintosh System software called the Sound Manager. The new version, 3.1, adds the following enhancements to the way your Macintosh deals with sound:



- Support for Interactive Multimedia Association (IMA) audio compression. This format is often used to compress CD-quality 16-bit sound files up to a quarter of their original size. With Sound Manager 3.1, IMA-compressed files may be used within QuickTime movies.
- Support for µLaw sound formats. µLaw (pronounced "moo-law") is a sound format commonly used on Sun Unix workstations. It has become a standard for sound files on the Internet, usually identified with a ".au" extension. µLaw is commonly used for voice and other low-quality sound resolutions, and can support compression ratios up to 2:1.
- More PowerPC-native code. Much more of the programming code in Sound Manager 3.1 is PowerPC-native, so it runs up to seven times faster on PowerMacs.
- Asynchronous alert sounds. Before Sound Manager 3.1, you couldn't do anything else on your Mac while an alert sound played. Sound Manager 3.1 plays alerts in the background, so you can continue to work while sounds are playing.

Sound Manager 3.1 contains an extension and a Control Panel. It is posted for downloading at **ftp.support.apple.com.—M.B.**

Microsoft Office fix for PowerMacs

Microsoft has released an extension to prevent Type 11 errors from occurring when using Microsoft Office 4.2 or 4.2.1 on Power Macintoshes. It also fixes bugs associated with printing under QuickDraw GX. The update is required only for PowerMacs. You can download the extension from **ftp.microsoft.com.—M.B.**

Off and running: Windows 95

It's been a month since Microsoft launched Windows 95 with a media blitz the likes of which the industry has never seen. Microsoft apparently isn't willing to release sales figures yet, but most industry estimates are that Windows 95 will prove to be one of the all-time best-sellers of PC software.

➢ Released concurrently with the new 32-bit operating system was the Microsoft Office "software suite" of applications designed especially for Windows 95 and Windows NT (Word, Excel, and PowerPoint, among others). With that, Office seems sure to further improve upon its already superdominant 80% of the suite market in this country. Sitting alongside Office on store shelves Aug. 24, launchday, were dozens of mainstream Windows 95 and NT-compatible 32-bit programs, with many more expected to hit the shelves in waves over the next few months. This marks the first time in history that a significant amount of supporting software was available at the release of a major new PC operating system.

➢ So, what's the verdict on Windows 95, boondoggle or breakthrough? The votes aren't all in yet, but early indications are that it's off to a fast start with probable smooth sailing ahead. Because Windows 95 is an enormously complex product, comprising about 10 million lines of computer code, predictably a fair number of users have reported problems installing and using it. Thankfully, notably absent has been word of a "showstopper"—a previously undiscovered bug so horrendous as to warrant a product recall or scare customers off. This is good news for those early-adopters already committed to Windows 95. There's little question that the industry has already all but accepted Windows 95 as the rightful heir to Windows 3.1 and Windows for Workgroups.

Our advice: Run NT if you can Windows 95 if you can't

Hardware needs

➢ ***Windows 95***

Processor: 386
- ❹We recommend: 486/Pentium

RAM: 4MB
- ❹We recommend: 16MB

Hard disk space: 50MB

➢ ***Windows NT***

Processor: 386
- ❹We recommend: 486/Pentium

RAM: 12MB
- ❹We recommend: 16–32MB

Hard disk space: 75MB

➢ DCRT's recommendation on Windows 95 is to proceed cautiously. Microsoft plans to release "tune-up packs" perhaps quarterly beginning early next year. These will incorporate bug fixes, performance enhancements, and features that didn't quite make it into the product at launch. We recommend waiting at least until the first tune-up pack before committing to Windows 95. Meanwhile, thoroughly plan your transition and continue testing.

➢ Also be sure to consider moving to Windows NT, the top-of-the-line Windows product and the future direction of Windows according to Microsoft. Essentially a superset of Windows 95, NT has had two years to mature. Although it still has the old Windows 3.1 and Windows for Workgroup user interface, Microsoft plans to give NT the Windows 95 look by spring or summer. In the meantime, NT 3.51 trailblazers can run a "prealpha" version of the Windows 95 interface that's less than feature-complete and very buggy but generally usable. Most persons considering a move to NT should wait for the new interface.

Our advice when choosing between Windows 95 and NT with the Win95 interface is this: Run NT if you can, Win95 if you can't.

➢ To explain: We believe NT, being a mature superset of Windows 95 and the more strategic longterm product, is the OS of choice—a view increasingly shared by large corporations, some of whom now go so far as to call Windows 95 an unnecessary stop on The Road to NT. Hindering NT's widespread adoption is the fact that it was never designed to be completely compatible with the incredible hodgepodge of PC hardware and software out there today. The reason: Full backward compatibility can be achieved only by compromising stability, which NT's forward-looking designers weren't willing to do. As a result, you may find that NT doesn't support a piece of hardware or software critical to your work. Before committing to NT then, be sure it supports everything you use. A list of NT-compatible hardware can be found on PUBnet. Although there is no official list of software known to have problems with NT, you can learn what works and what doesn't by asking around on online forums such as CompuServe. We will be maintaining a list ourselves on PUBnet.

➢ By contrast, backward compatibility with "legacy" hardware and software, especially computer games, was a primary design goal with Windows 95. Chances are, if a device or program you need doesn't work under NT, it *will* work under Windows 95, and this might well be a reason to go with Windows 95 rather than NT. Microsoft seems to have done a fine job in striking a balance between the contradictory design goals of backward compatibility and stability. You'll find that the frequent system-halting crashes of Windows 3.1 days have become much less common. So-called System Resource limitations too, which made it impossible to run more than a few large applications concurrently under Windows 3.1, have likewise been largely lifted. Microsoft has supposedly tested 2,500 popular Windows programs and found that only about one hundred have serious compatibility problems with Windows 95. This together with a list of incompatible hardware products is posted on PUBnet. As when considering NT, be sure to test all critical hardware and software for compatibility before committing to Windows 95.

➢ Of the two products, NT is the more stable. Think of Windows 95 as a sporty new car equipped with antilock breaks and dual airbags for safety. Now think of NT as an armored car—not the flashiest vehicle around but definitely the place to be when the apps start crashing around you. It's as solid as modern operating systems go and the natural choice if you want to be as careful with your data as you possibly can. But it's not for everyone.

➢ A feature-by-feature comparison of Windows 95 and Windows NT can be found on PUBnet in our new NT home page: **http://pubnet.nih.gov/PC/MICROSOFT/bussys/winnt/winnt.htm**. Also check out our Win95 WWW home page at left.—**D.Z.**

Some of the Win95 information available on PUBnet at the URL:

http://pubnet.nih.gov/pc/microsoft/peropsys/win95.htm

NIH computer security watch

by Kevin Haney

Passwords
Keys to the kingdom

Since the inception of automated information systems, people have realized that the electronic information they process can be sensitive and that it must be protected from prying eyes. To do that, some means of identification had to be employed—you had to be certain the user was who he said he was and that he wasn't an illegitimate user "borrowing" the identity and privileges of a legitimate user. The primary mechanism to accomplish this goal, then and today, has been the standard reusable password. Often maligned as an obsolete and ineffective means of protecting systems, the reusable password can provide a moderate level of security if properly chosen and used.

Make it a strong one

Many computer security incidents could have been prevented by using a "strong" password. What is a strong password? Simply put, it is a password that cannot be guessed given any information about you, and one that cannot be determined using current password cracking methods. The goal is to make it impossible for a would-be intruder to make educated guesses about what you've chosen. This leaves him no alternative but a brute-force search, trying every possible combination of letters, numbers, and punctuation. If your password is long enough, the brute-force approach is not feasible given the computing power available to most "crackers," as they're called.

To avoid brute-force searches, crackers will often employ an approach known as the "dictionary attack." Most computers store a list of user accounts and passwords in a file in encrypted form, meaning that the information is not comprehensible when viewed. However, the encryption algorithms are widely known. Thus, if a cracker can get a copy of your password file by exploiting security holes, he can use a standard dictionary or list of commonly used passwords, encrypt every word in it, and then compare the results with your encrypted password. If they match, he has your account name and password and can break into your system. This attack is most common against Unix systems, but all systems that store reusable passwords are ultimately susceptible.

So how do you make sure the password you choose is a strong one? Below are some guidelines, excerpted in large part from *Improving the Security of Your Unix System* by David A. Curry.

Password don'ts

- Don't use your login name or your real name in any form (as-is, reversed, capitalized, doubled).
- Don't use any other information easily obtainable about you. This includes a spouse's or child's name, license plate numbers, telephone numbers, social security numbers, your brand of automobile, the name of the street you live on, etc.
- Don't use a password of all numbers, or all the same letter. This significantly decreases the search time for a cracker.
- Don't use a word contained in any English or foreign language dictionary, spelling list, or other list of words. This protects you from dictionary attacks.
- Don't use the same password for every system you have an account on. If you do, a cracker who discovers your password will have access to all your accounts and data.
- Don't share your password or account with anyone else.

Password do's

- Do use a password that is at least six characters in length. If you don't, you make it likely that a brute-force attacker can succeed in guessing your password.
- Do use a password with mixed-case, if the system supports it.
- Do use a password with nonalphabetic characters (numerals, punctuation).
- Do use a password that is easy to remember, so you don't have to write it down.
- Do use a password that you can type quickly. This makes it harder for someone to steal your password by watching over your shoulder.
- Do change your passwords frequently, at least every 3 months.

Just a passing phrase

The above guidelines may seem to restrict password choices to an extreme. One method for choosing secure, easy-to-remember passwords that obey the guidelines is to use a "passphrase" instead of a password. To do so:

- Choose a line or two from a song or poem, and use the first letter of each word. For example, "In Xanadu did Kubla Khan a stately pleasure dome decree" becomes "IXdKKaspdd."
- Alternate between one consonant and one or two vowels, up to eight characters. This produces nonsense words that are usually pronounceable, and thus easily remembered. Examples: routboo, quadpop.
- Choose two words and concatenate them with a punctuation mark: dog;rain, book+mug, kid?goat.

Remember, your password is often your first and last line of defense against system intruders. By observing the guidelines above, you maximize your chances of coming through an attack unscathed.

WP-Win

To change Display Preferences, GOTO, or get bookmarks in WordPerfect 6.0a for Windows, place the cursor on the bottom horizontal scroll bar and click on the right mouse button. To quickly hide the status bar, just move the cursor to the bar, right-click the mouse button, and choose Hide status bar.—Blanche O'Neill, NCI (oneillb@dcbdcep.nci.nih.gov)

If you can chew gum and walk, you can multitask

by Pat Winkler

Do most users multitask—that is, run more than one program at once? Do *you* multitask? Well, of course you do. At least you *would* if you knew how.

It seems that everyone could benefit by leaving their calendar program or electronic mail running in the background during the day. Unfortunately users who are new to Windows may not know how to do that. Others may be multitasking and not even know it.

One of the biggest improvements cited in Windows 95 is how easily it manages multiple tasks. Let me assure current Windows 3.1 and Windows for Workgroups users that you have the same freedom to multitask. What you don't have is an obvious Start button and something called a Task Bar at the bottom of the screen reminding you of the programs you have running. So keeping track of programs and starting still others takes a little mental effort on your part.

Juggling multiple programs

The easiest way to start up multiple programs is to use the Startup group. If you have a program such as email, Clock, or Word that you use everyday and would like to have automatically loaded when you start Windows, put a copy of its program icon into the Startup group.

If you don't use the same programs everyday, using the Startup group to load them automatically is not very efficient. But even if you are basically a one-program-at-a-time kind of user, there still might be instances when access to a second application could come in handy, so keep reading.

Once you have one or more programs running, there is a number of ways to switch among them. If a running program's window is visible on the screen, you can simply click on it to activate it. If, on the other hand, your current window is maximized or otherwise obscuring your view of other programs you have running, you will have to use another method to move between them.

Under Windows 3.1 and Windows for Workgroups 3.11, there are at least four ways to move from program to program effortlessly. They are:

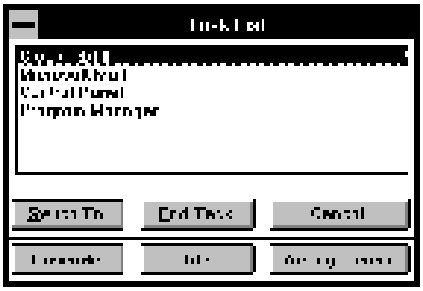
- The control menu box
- Ctrl + Esc
- Double-clicking on the wallpaper
- Alt + Tab

Mastering the task list

The first three of the four methods require using something called the Task List, an invaluable tool that comes with Windows to help you manage multiple tasks. There are at least three ways to bring up the Task List.

The first way is to click on the "control menu box," the little gray square in the uppermost left corner of any active window:

Of the choices presented on the menu, select *Switch To*. The Task List dialog box appears:



All programs that are currently running on your PC are displayed. To move to one of the other programs, click on the desired application from the list and then click on the *Switch To* button.

To load a program not listed, click on the choice *Program Manager* and then click on the *Switch To* button. The familiar Windows background appears, giving you access to all the programs on your PC. You are free to load whatever you want—keeping in mind that switching between tasks is always available via the Task List.

G+P Another way to access your Task List is to hold down the Ctrl key and press the Esc key. The Task List dialog box appears as described above.

A third way to avail yourself of the other programs running is to double-click on the empty background (where most users have hung wallpaper). Again, the Task List dialog box appears with all your tasks displayed.

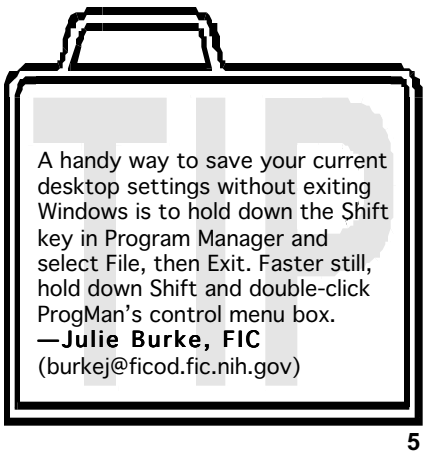
F+I Finally, the quickest way to multitask is to hold down the Alt key and tap the Tab key repeatedly. This allows you to cycle through the applications you have running. Each time you press the Tab key, a different application is presented, for example:

When you see the name of the program you want, simply let go of the Alt key, and the desired program is brought to the front. Note that this feature must be enabled in the Desktop settings of the Control Panel for it to work.

Standard disclaimer

Needless to say, the amount of multitasking that you will be able to do successfully regardless of the interface or operating system you are using depends on your PC's hardware resources. The more memory and disk space you have, the more programs you can run simultaneously.

Win-dows



*(**Dell,** continued from page 1)*

Example configurations

Using the above components, we can build some powerful yet affordable systems. We'll start out at the low end, move up to a typical system, then present a power user's delight. All prices are GSA listings and current as of Aug. 24, 1995. Your price may vary if you buy off GSA.

Entry level

Don't let the "entry" in the heading fool you. This system, while modestly configured, has plenty of horsepower. Some typical uses for such a system include data entry for administrative and scientific personnel, and light to modest secretarial work (word processing, email, and scheduling). No need to go overboard with the options here:

Dell OptiPlex Pentium 575 XL with 3 slots, 1MB video memory, 256KB cache	$1,385
16MB memory	$277
Windows 95, mouse (approximate)	$19
Ultrascan 15" monitor	$425
3.5/5.25" dual combo half-height floppy drive	$37
540MB IDE hard drive	$92
Spacesaver keyboard	$0
3Com Etherlink III network card	$82
3-year warranty	$0
Total:	**$2,317**

This basic system provides networked, Pentium performance at a modest price. It's easy to boost performance later on by adding an optional 256KB cache (about $200) and accelerated video card (about $200). Upgrading the monitor to 17 inches increases the cost another $400.

Business level

Now we are going to be a bit more demanding on our system. Several applications (5 or more) are usually run simultaneously. Graphics, office suites, databases, and online/Internet communications are typically active on the desktop. Thus, we need to increase speed, memory, and storage, and also include some additional hardware:

Dell OptiPlex Pentium 5100 XM with 5 slots, 1MB video memory, 256KB cache	$1,890
32MB memory	$879
Windows 95, mouse (est.) (for Windows NT, add about $200)	$19
Ultrascan 17" monitor	$832
3.5/5.25" dual combo half-height floppy drive	$37
1GB IDE hard drive	$286
Enhanced keyboard	$45
3Com Etherlink III network card	$82
1MB video memory upgrade	$64
CD-ROM, sound card, basic speakers	$272
28.8 data/fax modem	$138
3-year warranty	$0
Total:	**$4,544**

Compared with the Entry Level configuration, this one almost doubles the cost, but we've boosted performance, capacity, and feature set quite a bit. In reality, most NIH users will tend to configure systems that are somewhere between the Entry Level and Business Level configurations. Still, $4,500 for a well-equipped PC isn't half bad.

Power level

Occasionally, someone will require the ultimate in PC technology. That means the fastest processor, plenty of memory and storage, a large screen, and all the options. Graphics professionals and application developers fall into this category. Let's load a system:

Dell OptiPlex Pentium 5133 XMT with 6 slots, 1MB video memory, 512KB cache	$2,861
32MB memory	$879
Windows 95, mouse (approximate) (for Windows NT, add about $200)	$19
Ultrascan 21" monitor	$1,664
3.5/5.25" dual combo half-height floppy drive	$37
2.1GB SCSI hard drive with controller	$1,220
Enhanced keyboard	$45
3Com Etherlink III network card	$82
1MB video memory upgrade	$64
CD-ROM, sound card, premium speakers	$300
28.8 data/fax modem	$138
2–4GB DAT drive	$1,202
3rd-party Windows accelerator	$200
3-year warranty	$0
Total:	**$8,711**

Once again, we have nearly doubled in price. Processor speed is now the fastest money can buy, and our video/monitor combo is about as good as you can get. Storage space is approaching server capacity, and stored data is protected by a tape backup unit. Memory, however, remains the same because increases over 32MB boost performance only marginally. Likewise, the CD-ROM/sound combo is more than adequate.

Dell OptiPlex chassis options: the minitower XMT, low-profile XL, and midsize XM.

Ordering your Dell

The tables above were adapted from calculations generated by a nifty Windows program Dell provides free of charge off their Internet Web site (**http://www.us.dell.com/federal/elecgsa.html**). Called the Dell GSA Schedule On Disk, this program allows you to build various configurations and get accurate pricing in the process. In fact, the printouts are a good way to generate a price quote: Just white out the pricing and request your price quote via fax from an authorized Dell reseller.

Here are a few tips for would-be buyers:

- Try to buy from an authorized reseller. Many are classified as a small business, so they get first crack at filling the order. Also, these companies have been certified by Dell to provide a certain amount of service and support. Buying directly from Dell is possible, too, but it's somewhat difficult because they are categorized as a large business. Note that you can specify in your justification that the order should be awarded only to an authorized reseller.
- Break out each component as a line item with part number, list price, and discount price (i.e., GSA or Open Market). This helps your procurement specialist, administrative officer, and sales representative understand exactly what you are requesting. The Dell GSA Schedule On Disk application preformats your request in just this format.
- Send a request for quotation via fax to three vendors to aid the comparison shopping process. Double-check each item.
- Include with your product description a statement that specifies all internal peripherals—your line items—to be factory installed by Dell (unless the reseller is performing an agreed upon special service), and *accept no substitutions!* If you have been satisfied with the service provided by a particular reseller, you are within your rights to specify that reseller (or a list of resellers) in the justification.

The following are a handful of Dell authorized resellers:

Pulsar Data Systems Inc., 459-2650, Allen Smith
Office Solutions, (703) 642-1551, Brook Ambrose
Comteq Federal, 340-3422, Janet Galope

If you have questions about Dell orders, feel free to call us, or contact Dell's federal sales representative, David Weise, at 1-800-727-1100, or send email to: **David_Weise@ccmail.us.dell.com**

Why Dell?

by Dan Zoll

Product diversity is usually a good thing. In the case of PCs, the more alternatives you have to choose from, the better your chances of finding a system that fits your needs at an affordable price. But PC diversity has a downside: It's incredibly confusing!

Faced with the formidable task of choosing a system from the hundreds of brands available, people often call DCRT for help. "I'm no PC expert. I just want a good system at a reasonable price. What should I buy?" We could easily give them the names of six or eight respected brands, each of which may have a half-dozen model lines and scores of options, and wish them luck, but that wouldn't do much to clear up their confusion. Instead, people seem to cry out for specifics—a brand, model, and list of recommended options.

We honestly wish we could provide expert guidance in all the leading brands, but we realized several years ago that our best bet was to concentrate our limited resources tracking one brand. Consequently, over a six month period we considered many worthy candidates—Compaq, HP, DEC, IBM, Gateway 2000, Northgate, among others—before zeroing in on Dell. It was a tough decision. What tipped the scales in Dell's favor were the high marks it consistently received in customer satisfaction surveys such as those conducted by J.D. Power & Associates.

Since announcing our recommendation, we have been pleased to see Dell become one of the most popular brands of PC at NIH, with several thousand systems now deployed here. Were we to choose all over again, we would again pick Dell. Here are the reasons:

Satisfaction—Dell continues to receive accolades from satisfied customers. They must be doing something right.

Support—Granted, you can save—sometimes substantially—by buying from lesser names, but you may regret your choice the moment you need

*(See **Why,** page 16)*

Macintosh security programs

by Sandy Desautels and Charles Mokotoff

Over time, your Macintosh becomes an extension of your own private office space. You may have personal mail messages, employee reviews, private financial information, or any number of other files that may contain information you do not want anyone else to see.

You may think that by burying private files a few levels deep and coming up with cryptic names, your files are safe from prying eyes. But snoops can break through this rudimentary security very easily. You may need something more secure.

No security program has a fail-safe guarantee. Security programs are like burglar alarms—they can stop an amateur but at best slow down a pro.

Types of Mac security

Computer security on the Macintosh falls into three types. Many programs use a combination of these types for the most flexibility. They are:

1. Lockout password protection
2. Encryption
3. Shredding

Lockout password protection

You can lock out your entire hard drive, one or more partitions of your hard drive, or individual folders. Under this protection scheme, you must type in a password to access your information. If you lock your entire hard drive, a password is required when the system starts up. If the correct password is not typed, the computer will shut down.

This is the fastest and easiest method of protection. However, once the drive or files have been unlocked, they are freely available. If you leave your desk at any time after typing in the password, all protection is gone.

Encryption

An encryption program allows you to encrypt, or scramble, a document so that if someone else succeeds in opening the file, the text is unreadable.

There are many levels of encryption. Most programs use a rudimentary, proprietary encryption process that can process a file quickly but is fairly easy to decrypt. Sophisticated security programs use the National Institute of Standards and Technology's Data Encryption Standard (DES), developed in part at the National Security Agency. DES encryption can be slow—it may take an hour to encrypt a 1MB file—but it is much harder to defeat.

Are your files safe from prying eyes?

Shredding

When you delete files from your hard drive, the files are not actually deleted. Instead, directory information about them is deleted, so the Finder cannot find them and knows that the hard drive space is available to be used again. A file recovery program such as Norton Utilities can bring these files back.

To completely remove a file from your hard drive, you need a shredder program. Shredding obliterates the original data by overwriting it with random data.

Considerations

Before using any security program, there are some general considerations.

Just as a secret is no longer a secret when too many people know it, your files are not secure if you give your password out to too many people. For some guidelines on password selection, see the article on page 4.

Security programs very often change file structure, making it more difficult to recover damaged files or run hard drive programs to check file integrity. Furthermore, backup programs cannot back up files that are locked; you have to disable your security program during the backup process then reenable it.

An alternative to using security software is to buy a removable storage device. This allows you to store sensitive data only on the removable media and lock the media up when it is not being used.

Economical alternatives

If your security needs are simple, you may not need a separate program at all. Security features are part of some other programs.

Some of the most popular programs allow you to password-protect individual documents. Password protection is available in the latest versions of Microsoft Word and Excel as well as WordPerfect. Most database programs have access restrictions and password protection features built-in. The obvious drawback of this kind of protection is that only files for that particular application can be password protected.

General utility programs may offer some type of protection. FWB's Hard Disk Toolkit allows you to password-protect a hard drive partition. PowerBook utility programs often include some locking and password controls.

Screen savers can be useful when you need to step away from your desk and keep prying eyes off the document you may be working on at the time. Most screen savers allow you to add a password so that once they come on, you need the password to see your display again.

Recommendations

CryptoMatic
Kent-Marsh, $99

CryptoMatic consists of an extension and an application called CryptoMatic Administrator. Installing the extension places a new menu in the Finder's menu bar. To encrypt one or more files, choose *Encrypt* from the menu and then select the method of encryption from a dialog box and enter a key-combination code up to 16 characters long. To decrypt the file, double-click on it and enter the code in the dialog box.

There are five levels of encryption with this program. The first two are based on proprietary algorithms. The other three are based on DES—DES, DES-CBC, and Triple-DES. The com-

plexity and encryption time increase at each level.

You can create self-decrypting files similar to self-extracting archive files. With this option, you can send an encrypted file to someone who doesn't own CryptoMatic with the code key they would need to decrypt.

CryptoMatic also has a secure file trashing option. Select the files you want trashed and type a key combination. You can then choose either EasyTrash (recoverable) or Incinerate (files cannot be recovered, even with a recovery program).

Norton DiskLock
Symantec, $129

If you need to lock out your hard drive, this is a good program to use. A password is required to gain access to the Mac's hard drive. Because the program uses driver-level security, other users are not able to get to your hard disk by booting your system from a different start-up device.

Perhaps you want someone else to be able to work on files on your machine but don't want these files copied. DiskLock lets you disable the floppy drive and/or restrict what kind of files a user can copy. You can specify multiple levels of security, letting some users have copying rights while restricting others.

DiskLock also has some encryption capabilities as well. It comes with two drag-and-drop applications that allow users to automatically encrypt and decrypt files and folders.

Folder Bolt Pro
Kent-Marsh, $129

Folder Bolt Pro gives you an easy way to lock folders rather than locking an entire hard drive. You can use different passwords to unlock folders individually or a global password to unlock all folders at once. The only step required to lock a folder is to hold down the Shift key while clicking on the folder's close box. A dialog box will then appear to let you pick a password.

Folder Bolt Pro gives you three ways to lock a file: complete lock-out, read-only access, and write-only access (often referred to as a drop box, so that people can add files but are not able to open the folder).

UltraSecure
UsrEZ Software, $239

UltraSecure is the king of security programs. If you are looking for every security feature available, this is the program for you—there are 105 in all. Besides including all the features mentioned previously, including five levels of encryption, you can set an alert to tell you when someone connects to your personal file sharing. This program can be set up for multiple users with multiple passwords and preferences tailored to each user's needs.

Of course, all this flexibility and power comes with a price. This is not an easy program to use; the interface is confusing and nonintuitive. It should be considered only if you have very strong security needs.

Mac product review

RunShare for the Macintosh

Turbo-charged file transfers, but mileage may vary

by Sandy Desautels

Network file sharing on the Macintosh may be easy, but fast it's not. Anyone who has spent what seems like hours watching the file copy status bar creep across the screen can attest to that. There are a lot of very expensive and complicated changes that can be made to your network to improve its performance. One of the easiest things Macintosh users can do is buy a new piece of software: RunShare by Run Inc.

RunShare has but one purpose in life: to accelerate Macintosh file copying over networks. The company says you will see up to a fourfold increase in speed when copying files over an Ethernet network, although they admit your mileage may vary depending on the type of machines being used (older systems see very little speed increase).

RunShare is sold in multiuser packages of 2, 5, or 25 users and must be installed on both sending and receiving machines. The installer keeps track of the number of copies installed and won't let you exceed the number you've paid for.

Once RunShare is installed, you turn it on or off with a Control Panel device. Otherwise, it's completely transparent to the user. The only time you know it's there is when you're actually copying files, when the mouse arrow changes to the RunShare icon.

How well does RunShare work? Not as well as the company claims. In DSB tests, RunShare made little or no difference when copying a large number of small files. When copying one file of 15MB or more, however, speeds doubled.

Our results match the findings in other reviews of this product. Because of the way RunShare works, it does not speed up the copying of applications—only data—and it does not significantly increase copying speeds for any single file smaller than 10MB.

RunShare works by continuously monitoring the network for free time. When it finds it, it inserts additional packets onto the wire. Hence, the more simultaneous RunShare network transfers there are, the less free time there is on the network, lowering each session's overall speed gain.

At a cost of about $100 per user, RunShare is certainly one of the cheapest ways to increase network speed for a small group. The greater the number of users, however, the less attractive an alternative it becomes, especially as the increased network traffic offsets performance gains. The DSB recommends this product only for small Macintosh groups who routinely need to move large image files between machines. While a typical business group moving 1MB or smaller files will not gain from using RunShare, someone copying a 50MB file to or from a file server or another machine could cut copying time in half.

NIH Scientific Computing Resource Center news

The Scientific Computing Resource Center, located in Building 12A, is a shared-use computing facility for the hands-on evaluation and use of scientific software by NIH researchers. It offers access to software in four scientific areas: image processing, molecular biology, molecular modeling, and statistical data analysis. To schedule an appointment to use one of the SCRC computer stations or make arrangements to meet with a consultant, call the DCRT Technical Assistance and Support Center at 4-DCRT. The SCRC is open from 9 a.m. to 4:30 p.m. Monday through Thursday for telephone consultation, walk-ins, and appointment, and other hours by special arrangement.

Design of Experiments (DOE) methodology

Every researcher invests a large amount of time and energy in designing experiments. One hopes that through careful design the results will provide useful answers with a satisfying degree of certainty. This article provides a brief description of the statistical methodology called design of experiments (DOE) and its potential applications for certain types of biomedical research at NIH.

Some systems in nature can be approximated and understood with simple linear models, especially when only one independent variable, or factor, is studied at a time. Most natural systems, however, are inherently multivariate and thus described by several independent variables. In these situations, it is difficult, if not impossible, to determine influential factors by examining them one variable at a time, holding all other factors constant. Moreover, synergistic effects and interaction between factors frequently occur. The modeling and useful comprehension of such systems usually require more sophisticated design and evaluation techniques. Although the number of experiments grows rapidly with increasing numbers of factors studied and the number of factor levels, there exist statistical methods for choosing subsets of experiments (reduced designs), which conserve experimental resources.

The statistical methodology of design of experiments, developed during the 1920s, has traditionally been applied primarily in industrial or agricultural settings. There is, however, a growing interest in the use of DOE in biomedical, and particularly biochemical, experimentation. The discipline called chemometrics, which is still regarded as an emerging field, combines statistical design of experiments and multivariate data analysis. Chemometrics emerged during the seventies with the advent of the computing revolution, and has been used successfully in drug development, chromatographic optimization, organic synthesis and biofermentation, and other areas.

DOE is a sophisticated tool that provides a structured methodology for determining influential factors, making better use of scarce resources and time.

The primary reason for using DOE in the early stages of an experiment is to identify the independent variables or factors (those that the researcher can control or set constant) that have a large effect on the response variables. This process is often referred to as the "screening stage" in DOE. This is a different concept than statistical significance after the experiment has been run with all the data collected and analyzed by traditional statistical methods. Other important purposes of DOE include optimization of response variable values and model verification.

For example, DOE can be used to study the effect of test substances, nutrients, and exposure time and climate on animal growth, metabolism, behavior, etc. Maximal benefits are realized when DOE methods are used in the planning stages of a study followed by an evaluation using multivariate methods.

Statistical design of experiments is thus meant to augment and complement the traditional statistical methodology used in biomedical research, not replace it. DOE is a sophisticated tool for experienced researchers and statisticians who must carefully select the domain to be explored, and it provides a structured methodology for determining influential factors and makes better use of scarce resources and time. Data generated with statistical design of experiments can then be evaluated by a number of different techniques such as multiple linear regression, principal component regression, partial least squares regression, and other forms of multivariate data analysis.

Good software for the design of experiments and multivariate data analysis will allow investigators to: (1) generate a plan that suggests how to perform the experiment, (2) find experimental variables that have a "real" influence, (3) study the influence of the different variables on the result, (4) help identify experiments that may be erroneous or deviating, (5) study similarities and dissimilarities between experiments or samples, (6) find the optimal conditions for the desired or required results, and (7) predict the results of new experiments.

DOE software in the SCRC

The following software for statistical design of experiments and multivariate data analysis is currently available for use by researchers in DCRT's Scientific Computing Resource Center: CODEX, an add-on module for Excel that runs on both the Macintosh and Windows; JMP, developed by SAS Institute, which runs on both the Macintosh and Windows; S-PLUS, which runs under Windows and is also available on the Helix and ALW computing systems, and STATGRAPHICS, a Windows package.

Call (59)4-DCRT to make an appointment to use one of the SCRC computers or arrange to meet with a consultant. Start the planning of your experiment here and try out the DOE software. You may find it to be a very rewarding experience!—**Nils U. Olsson, Ph.D., NIAAA; Jean Daugherty, SCRC.**

Surfing the net

by Dale Graham

This column presupposes that you are using a graphical browser (or at worst, lynx, a command-line browser).

Keeping current

Are you using the most current version of your browser? Keeping up is pretty important, as each generation of browser seems to get faster and as many new features are being enabled that you will only have access to if you are using the "latest and greatest" browser. Here are the version numbers you should be using:

Netscape, Mac and Unix, 1.1
Netscape, Windows, 1.2b
Mosaic, Mac, 2b12
Mosaic, Unix, 2.6+
Mosaic, Windows, 2b4+

Info for computer users

Try the following site, which is Ziff-Davis' WWW site, for access to a wide variety of computer magazine information online. The site includes links to *PCWeek, MacWeek, PC Computing, MacUser, Computer Shopper, Computer Life, Inter@ctive Week,* and the publications of the Cobb Group. Naturally, only "teaser" articles are included, but some of these can be quite valuable. In addition, you see the tables of contents of current issues. Some of these sites even include computer software. The URL is: **http://www.zdnet.com/**

There is a very useful new WWW site for all kinds of free and shareware software: JUMBO. It has software for Windows, DOS, Macintosh, and Unix, with (supposedly) software coming soon for Newton, OS/2, and Windows 95. Interestingly the software included for Windows and Unix seemed to be more operating-system oriented, while the DOS and Macintosh sections contained mostly applications, including software for chemistry and biology. The lists of these last two were not extensive, but were (at least on the Mac side) the latest new software being released. The URL is: **http://www.jumbo.com/**

Sites for scientists

Looking for scientific software? One of the best spots around is the University of Indiana's archive site. They have software for all platforms, and an astounding variety of programs it is, too. Its URL is: **ftp://iubio.bio.indiana.edu**

Washington University - Merck have a joint WWW site, where their EST data has been posted. This looks to be a useful, well-organized site. The URL is: **http://genome.wustl.edu/est/esthmpg.html.** A related EST site is run by NCBI. Its URL is: **http://www.ncbi.nlm.nih.gov/dbEST/Index.html**

Biologists, need to find ordering or technical information? Check out **http://www.abc.hu/bio/part4.html,** a list of companies available through the WWW. (If you can't reach this site, try the following URL, which includes this list: **http://mantis.dcrt.nih.gov/Publications/Internet_Talk/Companies.html**.) There is a great deal of very useful information available from some of these sites. I strongly recommend Anderson's Time Saving Guides site (**http://www.atcg.com/aguide//atcghom.htm**), from which you can search a restriction enzyme database by name, site, overhang, supplier, etc.

GCG-Lite

Does the GCG suite of programs give you fits? Try out GCG-Lite, a new service being developed by Dr. Peter FitzGerald of DCRT. This service offers four of GCG's modules for online analysis using your browser: Restriction mapping, Mapsort, Primer (suggestion), and Reverse. The URL for GCG-Lite is: **http://molbio.info.nih.gov/molbio/analysis-nih/dnaform.html**

The only drawback of the program is that sequences must be in GCG format for it to work. You have several options:

- Use another WWW site to convert the sequence. The URL is: **http://dot.imgen.bcm.tmc.edu:9331/seq-util/readseq.html**
- Use a free version of READSEQ to alter sequences at your computer. There is a Mac version on PUBnet in the Science /Sequence Analysis folder.
- Use GCG-formatted sequences you already have.
- Use "readseq" at the helix% prompt to reformat to GCG format.
- Use the GCG to format sequences.

If you are using other GCG programs (or would like to, but have been frustrated by the Byzantine structure), check out these online DSB publications that attempt to walk you step by step through the process:

- Comparing two sequences to each other (GAP and other methods discussed). The URL is: **http://mantis.dcrt.nih.gov/Publications/Gapping/Start.html**
- Multiple sequence alignment (PILEUP and other methods are discussed). The URL is: **http://mantis.dcrt.nih.gov/Publications/Alignment/Cover.html**
- Looking for patterns in sequences — regulatory elements and motifs. The URL is: **http://mantis.dcrt.nih.gov/Publications/TransFactor/Cover.html**

If you'd like to look over an unofficial GCG manual online, here's a URL: **http://lenti.med.umn.edu/MolBio_man/MolBio_man.html.** Bear in mind that this manual is somewhat site specific and may talk about options or situations that don't hold here on the NIH campus. Worse yet, it is just a typical GCG manual, without added help or links that could have turned this into something really useful.

HTML, the language of the World Wide Web

by Charles Mokotoff

HTML—HyperText Markup Language—is the "programming code" of the World Wide Web (WWW). I placed programming code in quotes because HTML is nothing like a bona fide programming language such as AppleScript or C++. As its name implies, it is a method of marking up existing text to make it readable to users of WWW browsers, software that fetches and presents data over the Internet.

The WWW is the main reason for the recent explosion of interest in the Internet. Using a graphical browser such as Mosaic or Netscape, a user can move effortlessly from one site to another looking at and downloading text, images, sound, and even movies from anywhere in the world. This article takes a closer look at how this language works.

Some history

HTML is a subset of Standard Generalized Markup Language, which was developed from General Markup Language at IBM in the late sixties. Its original intent was to solve some of the problems of transporting data across different computer systems.

The scientists at CERN, the European Particle Physics Laboratory in Switzerland, developed the WWW in 1990. As much as anyone does, they own the Web and decide on the protocols such as HTML and HyperText Transfer Protocol (HTTP), the language of WWW servers.

HTML is ASCII text that is editable using any text editor or word processor. Specialized HTML editors exist, which are merely text editors that automatically insert "tags"—formatting instructions—for the user. This type of automation is highly recommended since it eliminates the need to constantly input the same markup data over and over.

Nuts and bolts

The computer that serves the files to your browser sends them using HTTP. The real fancy work is done by the browser, which has the job of interpreting this data. An HTML author will typically have both a text editor and browser open simultaneously and will check both continuously while working. Using this technique, we can mark up the text then look at it with the browser, making any corrections to the way we want it displayed.

HTML contains elements that are typically marked by a start tag, the contents of the element, then an end tag. Consider the following line of HTML code:

<H1>An Introduction to HTML</H1>

H1 stands for the first heading and is an element that will display in a browser at the largest font size.

Some tags are written singly such as <P> for a paragraph break and <HR> for a horizontal rule drawn across the width of the browser's page. Carriage returns and double spacing entered into the HTML are ignored by browsers. The rule of thumb is that formatting is only achieved by tags.

It is important to remember that HTML tells the browser how text should look in relation to what is "normal" text. But the browser is user-configurable, so normal for one user can look entirely different on another machine, depending on how the browser is set up. In addition, not all browsers interpret HTML the same way. For example, the <EM> tag will always be emphasized somehow, but in some browsers it will be in italics, while others will show bold text.

Another HTML tag tells the browser where to look for a particular image. It does not include the image itself, but just says to the browser, "Display an image here; you can find it at this location...."

<IMG SRC="HTML_stuff/graphics/logo.gif" ALT=logo here>

This string tells the browser to display a graphic named LOGO.GIF that can be found in a folder called GRAPHICS inside a folder called HTML_STUFF. This is all relative to the location of the particular HTML file you are browsing. If the user is working with a non-graphical browser, then it will do the alternative, which is to place the words "logo here" where the image would have been displayed.

Before long, the only way to get up-to-the-minute information may be via this medium.

HTML in action

The biggest strength of HTML lies in the first word of its name: hypertext. When a user clicks on a hypertext link, he moves directly to another file, or an image is displayed, or another server is called, or a file is downloaded. The beauty of this system is in the transparency of the process. When you click, you go off anywhere in the world, and you get the feeling of surfing through a boundless information space.

Suppose I want to distribute information on Apple's new color laser printer via my WWW server. I could carefully research and collate the data myself and offer the technical specifics of the printer complete with picture, and continue to update it on a regular basis. Or I could just link the text "Apple Color LaserWriter" to a WWW server at Apple Computer in Cupertino and let *it* send the data to the user. Hypertext links make the work of an information provider extraordinarily more efficient. Unless the user specifically looks at where the link points, it is not immediately obvious that he has left one server and jumped to another.

A simple exercise

Getting started with this language is easy. You will need a browser and any word processor or text editor. Type the following text:

```
<HTML>
<HEAD>
<TITLE>First HTML Page</TITLE>
</HEAD>
<BODY>
This is my first try at HTML
</BODY>
</HTML>
```

Save this document with the name TEST.HTML (Mac) or TEST.HTM (PC). Go to your browser and choose *Open File* from the *File* menu. Navigate on your hard drive to the test document and you will see the sentence "This is my first try at HTML" displayed. Experiment with the formatting by adding <H1> tags as shown earlier in this article. Always remember to save your text then reload the browser (in Netscape, the *Reload* command is in the *View* menu and also on the toolbar).

This simple exercise will give you a feel for writing HTML and checking it with a browser.

Making it real easy

Several programs and extensions are now available that handle the grunt work of HTML coding for you. For example, with Word for Windows 6 fitted with Microsoft's free Internet Assistant add-in, you create a Word document as usual then simply choose to save it as HTML; Internet Assistant adds HTML tags for you, giving you a file ready to be served on the Internet. The downside of using tools like Internet Assistant is that you lose flexibility. They are no substitute for learning HTML proper.

Learn by stealing

The best way to learn HTML is by looking around on the Web and using your browser's *View Source* command to examine the code of any page in which you may be interested. You can save the text for later reference and study the HTML and the resulting browser output.

Two excellent online tutorials for learning HTML can be found at **http://www.ncsa.uiuc.edu/demoweb/html-primer.html** and **http://mantis.dcrt.nih.gov/Publications/HTMLing/Cover.html**

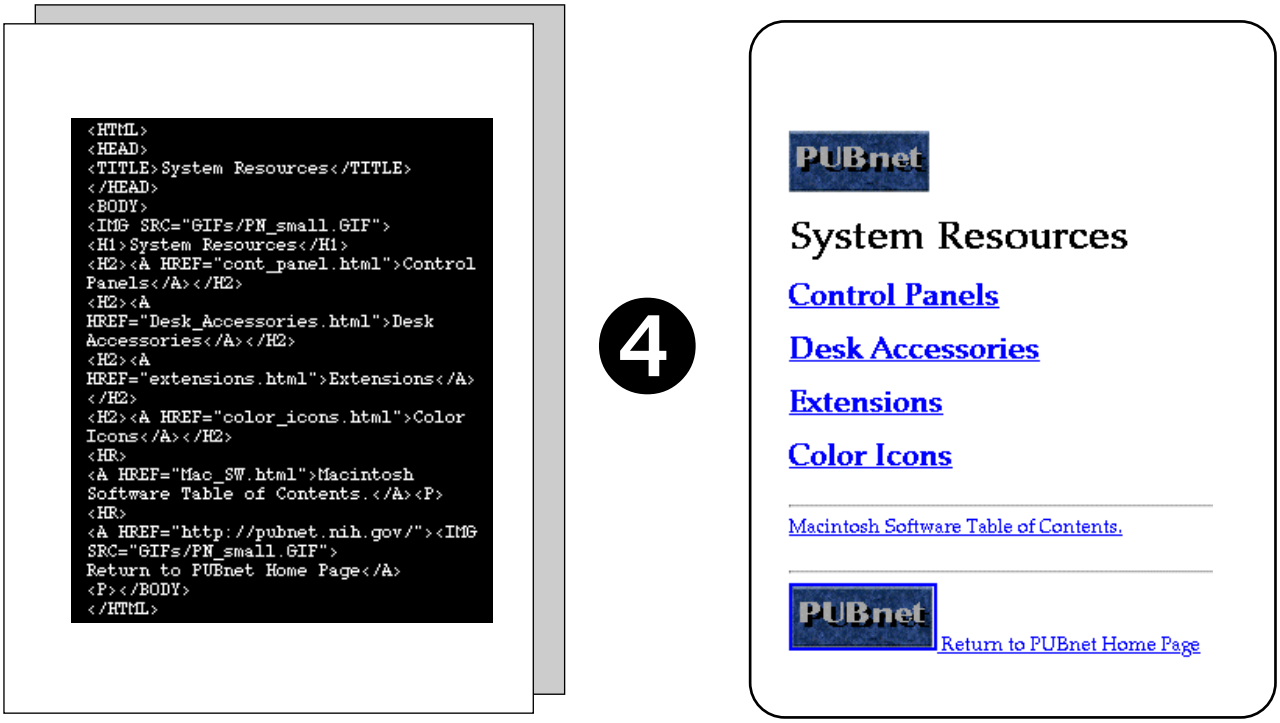
If information dissemination is in any way related to your job, the skills you learn in this endeavor will serve you well. It doesn't seem an exaggeration to say that before too long, the only way to get up-to-date information, be it medical research, computer technology, or even the latest sports scores, will be via this electronic medium.

Recommended reading

Teach Yourself Web Publishing with HTML in a Week
Laura Lemay
SAMS Publishing, $25

HTML Manual of Style
Larry Aronson
Ziff-Davis Press, $19.95

Using HTML
Tom Savola
QUE Books, $39.99



Voilà! The HTML code on the left produces the WWW page on the right.

DCRT URLs

What is a URL and why would you want to know one? A URL—a universal resource locator—is shorthand for an Internet address. You can use your browser and URLs to navigate to interesting and useful Internet sites. To do so, open your browser, select Open URL *(*Open Location *in Netscape) and then very, very carefully type in the URLs as they are shown below. Please bear in mind that there are no spaces, tabs, or returns in any URL. When you are done, click on the OK button. The site should appear in your browser.*

http://www.nih.gov/
The NIH Home Page
http://www.nih.gov/dcrt/
The DCRT Home Page
http://mantis.dcrt.nih.gov/
DSB Systems Consulting Section Home Page
http://pubnet.nih.gov/
PUBnet
http://mantis.dcrt.nih.gov/Publications.html
DSB publications
http://pubnet.nih.gov/dsbwww/dsb-posp.htm
DSB Position Papers
http://mantis.dcrt.nih.gov:8008/Publications/MacPigLets/PigPage.html
Mac *Product Information Guide*
http://mantis.dcrt.nih.gov:8008/Publications/Briefs/Briefs.html
PCBriefs online
http://pubnet.nih.gov/pc/microsoft/peropsys/win95.htm
Windows 95 information
http://pubnet.nih.gov/PC/MICROSOFT/bussys/winnt/winnt.htm
Windows NT information

New URL:

http://tmp.dcrt.nih.gov/dcrt/services/security.html
DCRT Computer Emergency Response Team computer security-related information, including government security guidelines, NIH security organizations, and DCRT system security information. You can also download the latest virus software for PCs and Macintoshes, as well as popular security utilities for Unix systems. Links to many other Internet security sites are also available.

Product review

HP's JetDirect EX

Easy net hookup for most printers

by Frank Newman

If you manage a network, you occasionally run into a product that makes your job so much easier you feel compelled to recommend it to others. Recently I came across just such a product, Hewlett-Packard's JetDirect EX.

More ways to share

Traditionally, printers have been shared on networks by connecting them either to user workstations or directly to a network server. Both approaches have their drawbacks. The first method can cause performance problems for the workstation user, while the second may be logistically inconvenient for users and limits the number of devices you can share.

HP's initial answer to the printer sharing problem was JetDirect, an interface board that fits in a slot in the back of HP LaserJet printers, allowing them to connect directly to the network as a node. Unfortunately, the original JetDirect was not an option if you didn't own a LaserJet.

That's where JetDirect EX comes in. Unlike the original JetDirect, JetDirect EX consists of a little black box with a network connector and parallel port. With it you can hook any parallel printer up to virtually any type of network running almost any network operating system.

Switch-hitter

The JetDirect EX can connect to either Ethernet or Token Ring and supports LAN Manager, Windows NT, Windows for Workgroups, NetWare, AppleTalk, and many different flavors of Unix. Because it switches between protocols automatically, it can service several different network operating systems simultaneously. Print jobs can be sent by way of TCP/IP, IPX, Ethertalk, or DLC (for Microsoft networks).

Easy installation

Installing the JetDirect EX is about as easy as it gets. I completed the installation on NetWare 4.1 and Windows NT 3.51 networks in about an hour, and after reading only one page of documentation, which surprised me since I am a novice with NT. I was especially pleased at how nicely the NetWare installation went. It even created the NDS printer object and placed it into my directory tree.

In actual use, I found that the JetDirect EX switches back and forth between NT and NetWare print jobs flawlessly. Another nice feature is SNMP support, which means you can monitor JetDirect devices with a number of third-party network monitoring tools.

Bottom line

If you have a LaserJet, by all means buy the JetDirect internal; it's faster and will eliminate some of the cables needed for the external device. Get the JetDirect EX only if you have a non-LaserJet printer. Also, be sure that the printer you want to share has a network connection nearby. Finally, note that this device works with parallel printers only, so check that your printer is not serial. When ordering, specify Ethernet or Token Ring. The JetDirect EX is priced at about $350. For more information, call Hewlett-Packard at 1-800-752-0900.

Pentium

According to Intel, the best way to tell if a Pentium chip is flawed is to open Windows Calculator in Scientific view and divide 1 by 824633702441.0 (keeping the result in the register). Then multiply the result by the same number (824633702441.0): If the answer is not 1, the chip is bad.—Lee Freeman, DCRT (leef@magic.dcrt.nih.gov)

Ask TASC — Technical Assistance and Support Center

by Jenny Riewerts

"...VIRUSES...FAX GATEWAY... POP/HELIX MAIL...DIRECTORY SERVICE..."

The following questions were taken from actual calls to TASC, the DCRT help desk. If you have a question you would like to see answered in a future column, send email to ***4DCRT@nih.gov*** *and reference this column.*

☎ IS there a software package I can use everyday to check my PC and diskettes for viruses?

There is a variety of virus software on the market. One of the most often-used programs here at NIH is called F-prot. NIH has a user site license for F-prot, which means it is available to you free of charge. You can get it from PUBnet, under the directory name \SECURITY\VIRUSES\FPROT.

To install F-prot, make a directory on your hard drive called FPROT. Download (binary) the file FPROT218.EXE from the PUBnet directory into your F-prot directory. (Note: 2.18 is the current version number and may change in the future.) This file is self-extracting; to execute it, double-click on the filename in File Manager or type the filename and press Enter at the DOS prompt.

To have F-prot activate when you boot your computer, you must put certain commands in your AUTOEXEC.BAT file. Place the following statement directly below the PATH statement: C:\FPROT\VIRSTOP When your PC boots, F-prot's virus detection program will be placed in memory and notify you if any viruses show up when you are working with diskettes. Remember, though, the best way to protect your data is to make frequent backups of your system!

☎ MY PC is showing an error that a virus has infected the Master Boot Record of my hard drive. What should I do?

There are several viruses that may affect the Master Boot Record, such as the Monkey or NIH-1 viruses. To disinfect the Master Boot Record, go to a clean PC and make a boot floppy (put a new diskette in the drive, go to the DOS prompt, change to that drive letter, and type the command **format /s**). Also, type **copy c:\dos\fdisk.exe** to copy the FDISK file that you will use to fix the Master Boot Record. Write-protect the boot floppy by sliding the cover to expose the small, square hole in the bottom of the diskette. Take the boot floppy to your infected PC, place it in the diskette drive, and turn your PC on. The PC will boot off the floppy diskette instead of the hard drive. Type **fdisk /mbr** and press Enter to replace the Master Boot Record with a clean one. When you have finished, take the diskette out of the drive and reboot your PC normally. You should no longer have problems with the virus.

☎ HOW can I look at diskettes that are brought in from outside the office to see if there are any viruses on them, before they are used in our PCs?

Most virus detection software allows you to scan diskettes. F-prot, for example, allows you to scan a diskette and disinfect it if a virus is found.

From the DOS prompt, change into the Fprot directory. Choose *Scan,* then *Search.* Confirm that the scan is looking at the correct diskette drive letter and that the *Action* is *Disinfect/Query.* Once you are certain that the parameters are correct, choose *Begin* to start the scan. If F-prot finds a virus on the diskette, it will prompt you to remove it, if possible. Once you have run F-prot on the diskette and it comes up clean, you may safely use it.

☎ WHAT is the fax gateway and how do I access it?

You may use the fax gateway to send faxes to anyone in the NIH community. The gateway works through the email system. The fax must be contained in the body of an email message; you may not attach files. To send the fax, type the address in the recipient name field using the following format: **recipient_name%fax-phone-number@fax.nih.gov**. The recipient_name must be typed exactly as you want it to appear on the cover page. Example:

John_Smith%23456@fax.nih.gov

☎ THERE is only one PC in our office, and we would like to use both POP email and Helix email. Is this possible?

Yes. When you load Eudora for your POP account, use the EUDORA.POP directory instead of accepting the EUDORA default. Put the appropriate POPserver parameters in the configuration. When the icon is created, edit the *File Properties* description to show that the icon represents Eudora for the POP server. Load Eudora again, this time using the EUDORA.HLX directory. Remember to put the Helix parameters in the configuration. Edit this icon description to reflect Eudora for Helix. You will now show two icons, each of which may be used to get email from the respective accounts.

☎ MY Directory Service email entry is currently pointing to my Helix address. How can I change this to show that my Microsoft Mail address is preferred?

From Eudora mail, address an email message to **change@nih.gov.** You do not need to put anything in the subject or body of the message. You will be sent a change form in response. Fill it out, indicating your Microsoft Mail address as your directory email address. You may also change your nickname here. Send this form back to the Directory Service. You will receive a response indicating that the change has been made. If a sender uses your address with only the ".nih.gov" extension (e.g., johns@nih.gov), you will receive the message in your MS Mail inbox. However, if the sender addresses the email directly to your Helix address (johns@helix.nih.gov), it will still arrive in your Eudora inbox.

(**Why,** *continued from page 7)*

product support, which with some brands is minimal to nonexistent. Dell support is among the best in the industry.

Technical merit—Dell systems are as technically advanced as any brand on the market. Also to its credit, Dell updates its corporate OptiPlex line *less* frequently than its home-targeted Dimension line. The reason: Corporate buyers prefer more continuity in product lines as well as guaranteed network compatibility (network certification takes time).

Confidence—Dell is a major computer maker in sound financial condition. This means you can buy a Dell today confident that a Dell representative will be around to answer the phone if you need help a few years from now.

Price—Dell systems are not the cheapest around, but they're reasonably priced, especially when you consider the many other pluses to buying from Dell. When buying any computer, price is important, but it should *not* be your primary concern.

Responsiveness—Since NIH is now a very large Dell account, we have some clout. When problems arise with Dell systems, we stand a better than average chance of getting them resolved quickly, to our satisfaction.

If you have problems with Dell systems, please contact Dell's NIH representative, Paula Frappollo, at (703) 802-9850, or address email to: **Paula_Frappollo@ccmail.us.dell.com** DCRT would also like to hear about any problems you are having with Dell systems. You can reach us through the numbers on this page.

Time to renew!

Mailing lists are a little like government. Left to their own devices, they tend to grow uncontrollably, all the while becoming less and less relevant to the task at hand. Such is the case with the *PCBriefs* mailing list, which over the past eight years has almost tripled in size—to nearly 7,000 names at present.

We feel our mailing list is in need of streamlining. Beginning in January, readers will need to renew annually to keep receiving *PCBriefs*. To renew, please contact the TASC Help Desk by phone, fax, email, PUBWARE, or in person, or fill in the information below and fax or mail it to us. **The deadline is Dec. 27.**

Name: _____

Bldg./Rm.: _____

Phone: _____

ICD: _____

Got a tip?

Did you read the handy tips in this issue, tips sent in by fellow NIHer's who found ways of making their computing lives easier? If you have a short computer-related tip to offer—about PC or Mac hardware, software, maybe ergonomics—by all means share it with your colleagues! Send your tip to our editor. Each issue, he will publish several of the tips he receives.

Numbers to know

DCRT

Technical Assistance and Support Center (TASC)	**(59)4-DCRT (3278)**
FAX	(40)2-7349
TDD	(49)6-8294
Email	4DCRT@NIH.GOV

Providing support for: PC, Macintosh, LAN, Customer Accounts, MVS Mainframe, Scientific Computing Resource Center, Statistical Software, Technical Information Office, Training Program, User Groups (BRMUG, Computer Support Coordinators, CURE/TLC, WUG)

Administrative Database (ADB)	(49)6-6256
Advanced Lab. Workstation (ALW)	(49)6-UNIX
Helix	(49)6-4823
Information Office	(49)6-6203
Intel Highly Parallel Supercomputer	(49)6-1111
NIHnet	(40)2-3140
VMS	(301) 210-3505

NIH and other

BEIP Computer Repair	(49)6-4131
Dell Technical Support	1-800-274-1140
Div. of Workforce Development	(49)6-6211
IBM Technical Support	1-800-772-2227
NIH User Resource Center Bldg. 31	(49)6-5025
NIH User Resource Center EPS	(40)2-4722

PCBriefs *is published for NIH employees by the DCRT Distributed Systems Branch. To have your name added to the mailing list, call 4-DCRT. Contributions of articles are always welcome.*

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